

JAMES C. MUSGROVE

Petroleum Geologist
212 Main Street
P.O. Box 215
Claflin, KS 67525

Office (620) 588-4250

Res. Claflin (620) 587-3444

Mai Oil Operations
Kramer 'A' #8
W/2-NE-NE-SW (2310' FSL & 2250' FWL)
Section 14-15s-14w
Russell County, Kansas
Page 1

5 1/2" Production Casing Set

Contractor: Southwind Drilling Co. (Rig #3)
Commenced: February 3, 2014
Completed: February 11, 2014
Elevation: 1893' K.B; 1891' D.F; 1885' G.L.
Casing program: Surface; 8 5/8" @ 534'
Production; 5 1/2" @ 3394'
Sample: Samples saved and examined 2350' to the Rotary Total Depth.
Drilling time: One (1) foot drilling time recorded and kept 2350 ft. to the Rotary Total Depth.
Measurements: All depths measured from the Kelly Bushing.
Drill Stem Tests: There were five (5) Drill Stem Tests ran by Trilobite Testing Co.
Electric Log: By Nabors; Dual Induction, Compensated Density/Neutron Log and Micro.

<u>Formation</u>	<u>Log Depth</u>	<u>Sub-Sea Datum</u>
Anhydrite	872	+1021
Base Anhydrite	911	+982
Grand Haven	2448	-555
1 st Tarkio Sad	2457	-564
Dover	2470	-577
2 nd Tarkio Sand	2478	-585
Tarkio Lime	2518	-625
Elmont	2581	-688
Howard	2719	-826
Topeka	2790	-897
Heebner	3020	-1127
Toronto	3025	-1132
Lansing	3083	-1189
Base Kansas City	3287	-1394
Arbuckle	3333	-1440
Rotary Total Depth	3395	-1502
Log Total Depth	3396	-1503

(All tops and zones corrected to Electric Log measurements).

SAMPLE ANALYSIS, SHOWS OF OIL, TESTING DATA, ETC.

	<u>Log Depth</u>	<u>Sub-Sea Datum</u>
Grand Haven	2448	-555
1 st Tarkio Sad	2457	-564
Dover	2470	-577
2 nd Tarkio Sand	2478	-585
Tarkio Lime	2518	-625
Elmont	2581	-688
Howard	2719	-826
Topeka	2790	-897
Heebner	3020	-1127

1ST TARKIO SAND SECTION

2457-2464' Sand; gray, very fine grained, micaceous, "shaley", poorly developed.

2ND TARKIO SAND SECTION

2478-2486' Sand; gray, black, grayish green, fine grained, sub rounded, friable, fair intergranular porosity, micaceous, trace spotty brown stain, show of free oil and no odor in fresh samples.

Drill Stem Test #1 2450-2530'

Times: 30-30-45-45

Blow: Strong

Recovery: 50' heavily oil cut mud
(40% oil, 60% mud)
186' muddy water

Pressures: ISIP 701 psi
FSIP 676 psi
IFP 56-110 psi
FFP 114-149 psi
HSH 1247-1195 psi

TOPEKA SECTION

2982-2982' Limestone; cream, finely crystalline, fossiliferous in part, scattered porosity, trace black stain, no free oil and no odor in fresh samples.

TORONTO SECTION

3025-3035' Limestone; tan, finely crystalline, few fossiliferous, poor porosity, chalky, no shows.

LANSING SECTION

3083-3090' Limestone; tan, finely crystalline, slightly cherty in part, poor porosity, no shows.

3103-3108' Limestone; tan, finely crystalline, oolitic in part, dense, trace black stain, no free oil and no odor in fresh samples.

3122-3130' Limestone; cream, finely crystalline, oomoldic, good oomoldic porosity, golden brown stain, show of free oil and faint odor in fresh samples.

Drill Stem Test #2 3086-3130'

Times: 30-30-45-45

Blow: Weak

Recovery: 25' mud

**Pressures: ISIP 460 psi
 FSIP 459 psi
 IFP 33-34 psi
 FFP 35-37 psi
 HSH 1684-1605 psi**

- 3134-3144' Limestone; tan, finely crystalline, slightly cherty, dense, questionable brown stain/discoloration, no show of free oil and no odor in fresh samples.
- 3154-3164' Limestone; tan, finely crystalline, slightly cherty, dense.
- 3167-3174' Limestone; tan, finely crystalline, fossiliferous, poor visible porosity, no shows.
- 3180-3191' Limestone; tan, finely crystalline, oomoldic, fair oomoldic porosity, (barren).
- 3230-3240' Limestone; tan, finely crystalline, few fossiliferous, chalky, poor porosity, no shows.
- 3246-3256' Limestone; white, oolitic, chalky, poorly developed porosity, no shows.
- 3263-3271' Limestone; tan, finely crystalline, oomoldic, fair oomoldic porosity, poor light brown stain, no show of free oil and no odor in fresh samples.
- 3300-3310' Limestone; tan, buff, few fossiliferous, chalky, poor visible porosity, no shows.

ARBUCKLE SECTION

- 3333-3337' Dolomite; white, gray, finely crystalline, fair intercrystalline porosity, golden brown stain, show of free oil and strong odor in fresh samples.
- 3337-3343' Limestone; tan, finely crystalline, oomoldic, fair oomoldic porosity, poor light brown stain, no show of free oil and no odor in fresh samples.
- 3343-3349' Limestone; tan, buff, few fossiliferous, chalky, poor visible porosity, no shows.

Drill Stem Test #3 3288-3337'

Times: 30-30-45-45
Blow: Fair
Recovery: 70' gassy oil
 15' very slightly oil cut mud
 (5% oil, 95% mud)
Pressures: ISIP 943 psi
 FSIP 809 psi
 IFP 35-39 psi
 FFP 44-56 psi
 HSH 1767-1677 psi

3337-3342' Dolomite; white, finely crystalline, scattered intercrystalline type porosity, light brown stain, show of free oil and good odor in fresh samples.

Drill Stem Test #4 3337-3342'

Times: 30-30-45-45
Blow: Strong
Recovery: 30' clean oil
 496' muddy water
Pressures: ISIP 980 psi
 FSIP 972 psi
 IFP 20-117 psi
 FFP 120-240 psi
 HSH 1770-1714 psi

3348-3355' Dolomite; white, fine and medium crystalline, fair intercrystalline and vuggy porosity, light brown stain, fair show of free oil and fair odor in fresh samples.

Drill Stem Test #5 3346-3355'

Times: 30-30-30-30
Blow: Strong
Recovery: 1550' muddy water
Pressures: ISIP 1022 psi
 FSIP 1017 psi
 IFP 113-478 psi
 FFP 506-723 psi
 HSH 1777-1639 psi

3360-3380' Dolomite; as above, decreasing stain, no show of free oil and faint odor in fresh samples.

Mai Oil Operations
Kramer 'A' #8
W/2-NE-NE-SW (2310' FSL & 2250' FWL)
Section 14-15s-14w
Russell County, Kansas
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3380-3395' Dolomite; white, fine crystalline, slightly cherty, few sandy, light brown stain, no free oil and faint odor in fresh samples

Rotary Total Depth **3395**
Log Total Depth **3396**

Recommendations:

5 1/2" production casing was set and cemented on the Mai Oil Operations, Kramer 'A' #8; Section 14-15w-14w, Russell County, Kansas.

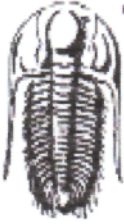
Respectfully submitted;

James C. Musgrove and Clint Musgrove

James C. Musgrove and
Clint Musgrove,
Petroleum Geologists



Rotary Total Depth 3395
Log Total Depth 3396



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston Rd, STE 800
 Dallas TX 75225
 ATTN: Clint Musgrove

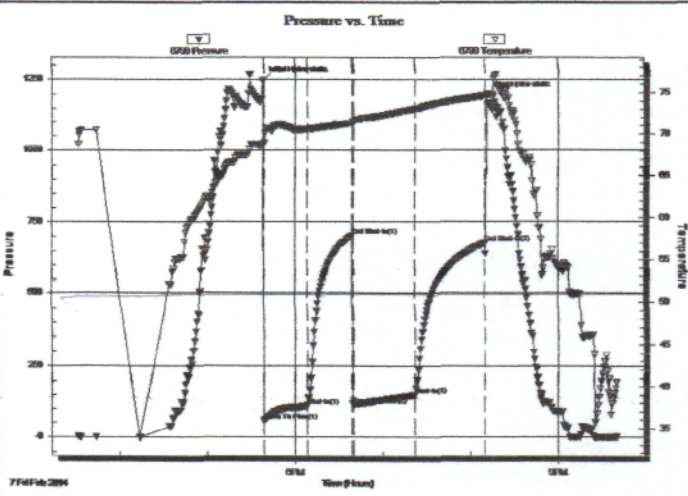
14-15s-14w Ruseell KS
Kramer "A" #8
 Job Ticket: 56067 **DST#: 2**
 Test Start: 2014.02.07 @ 15:32:00

GENERAL INFORMATION:

Formation: **Tarkio**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:38:45
 Time Test Ended: 21:40:45
 Interval: **2450.00 ft (KB) To 2530.00 ft (KB) (TVD)**
 Total Depth: 2530.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Cody Bloedorn
 Unit No: 73
 Reference Elevations: 1885.00 ft (KB)
 1878.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 6799 **Inside**
 Press@RunDepth: 149.15 psig @ 2517.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.07 End Date: 2014.02.07 Last Calib.: 2014.02.07
 Start Time: 15:32:05 End Time: 21:40:44 Time On Btm: 2014.02.07 @ 17:38:30
 Time Off Btm: 2014.02.07 @ 20:11:00

TEST COMMENT: 30 - IF- B.O.B. in 13 minutes
 30 - IS- Surface return
 45 - FF- B.O.B. in 19 minutes
 45 - FS- Surface return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1247.85	68.67	Initial Hydro-static
1	56.21	68.90	Open To Flow (1)
30	110.11	70.54	Shut-in(1)
61	701.07	71.36	End Shut-in(1)
62	114.67	71.53	Open To Flow (2)
104	149.15	73.05	Shut-in(2)
152	676.19	74.69	End Shut-in(2)
153	1195.18	74.89	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
186.00	MW, 50%M, 50%W	1.52
50.00	HOCM, 40%O, 60%M	0.70

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Mai Oil Operations Inc
8411 Preston Rd, STE 800
Dallas TX 75225
ATTN: Clint Musgrove

14-15s-14w Ruseell KS
Kramer "A" #8
Job Ticket: 56068 **DST#: 3**
Test Start: 2014.02.08 @ 23:00:00

GENERAL INFORMATION:

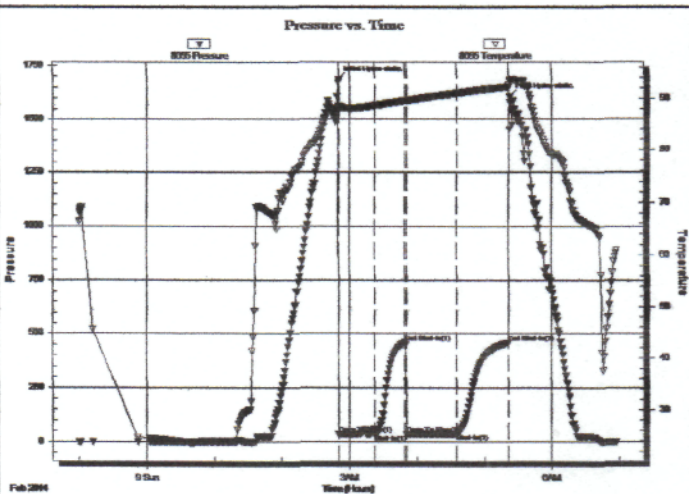
Formation: **LKC "A-C"**
Deviated: **No Whipstock** ft (KB) Test Type: **Conventional Bottom Hole (Reset)**
Time Tool Opened: 02:50:30 Tester: **Cody Bloedorn**
Time Test Ended: 06:58:00 Unit No: **73**
Interval: 3086.00 ft (KB) To 3130.00 ft (KB) (TVD) Reference Elevations: **1885.00 ft (KB)**
Total Depth: **3130.00 ft (KB) (TVD)** **1878.00 ft (CF)**
Hole Diameter: **7.88 inches** Hole Condition: **Fair** KB to GR/CF: **7.00 ft**

Serial #: 8655

Outside

Press@RunDepth: **37.11 psig @ 3122.00 ft (KB)** Capacity: **8000.00 psig**
Start Date: **2014.02.08** End Date: **2014.02.09** Last Calib.: **2014.02.09**
Start Time: **23:00:05** End Time: **06:57:59** Time On Btrm: **2014.02.09 @ 02:50:15**
Time Off Btrm: **2014.02.09 @ 05:22:30**

TEST COMMENT: 30 - F- 3" blow
30 - IS- Surface return
45 - FF-2" blow
45 - FSI-No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1684.82	88.55	Initial Hydro-static
1	33.13	88.19	Open To Flow (1)
33	34.88	88.70	Shut-In(1)
59	460.33	89.68	End Shut-In(1)
61	35.49	89.67	Open To Flow (2)
105	37.11	91.06	Shut-In(2)
151	459.38	92.33	End Shut-In(2)
153	1605.74	93.45	Final Hydro-static

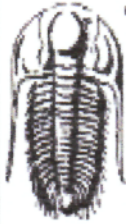
Recovery

Length (ft)	Description	Volume (bbl)
25.00	Mud, 100%M	0.35

* Recovery from multiple tests

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



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DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston Rd, STE 800
 Dallas TX 75225
 ATTN: Clint Musgrove

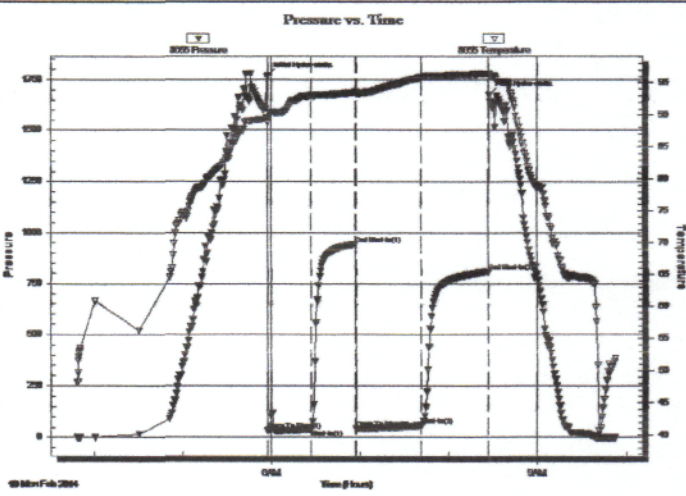
14-15s-14w Ruseell KS
Kramer "A" #8
 Job Ticket: 56069 **DST#: 4**
 Test Start: 2014.02.10 @ 03:49:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: **No** Whipstock: **ft (KB)**
 Time Tool Opened: 05:57:45
 Time Test Ended: 09:53:15
 Test Type: **Conventional Bottom Hole (Reset)**
 Tester: **Cody Bloedorn**
 Unit No: **73**
 Interval: **3288.00 ft (KB) To 3337.00 ft (KB) (TVD)**
 Reference Elevations: **1885.00 ft (KB)**
1878.00 ft (CF)
 Total Depth: **3337.00 ft (KB) (TVD)**
 Hole Diameter: **7.88 inches** Hole Condition: **Fair**
 KB to GR/CF: **7.00 ft**

Serial #: 8655 **Outside**
 Press@RunDepth: **56.17 psig @ 3324.00 ft (KB)** Capacity: **8000.00 psig**
 Start Date: **2014.02.10** End Date: **2014.02.10** Last Calib.: **2014.02.10**
 Start Time: **03:49:05** End Time: **09:53:14** Time On Btm: **2014.02.10 @ 05:57:30**
 Time Off Btm: **2014.02.10 @ 08:27:15**

TEST COMMENT: 30 - IF- 5" blow
 30 - IS- No return
 45 - FF- 2 1/2" blow
 45 - FS- No return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1767.14	89.59	Initial Hydro-static
1	35.61	88.80	Open To Flow (1)
30	39.01	93.05	Shut-In(1)
60	943.05	93.50	End Shut-In(1)
60	44.15	93.26	Open To Flow (2)
104	56.17	95.88	Shut-In(2)
149	809.07	96.41	End Shut-In(2)
150	1677.24	96.34	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
70.00	GO, 20%G, 80%O	0.98
15.00	VSOOM, 5%O, 95%M	0.21

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

* Recovery from multiple tests



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston Rd, STE 800
 Dallas TX 75225
 ATTN: Clint Musgrove

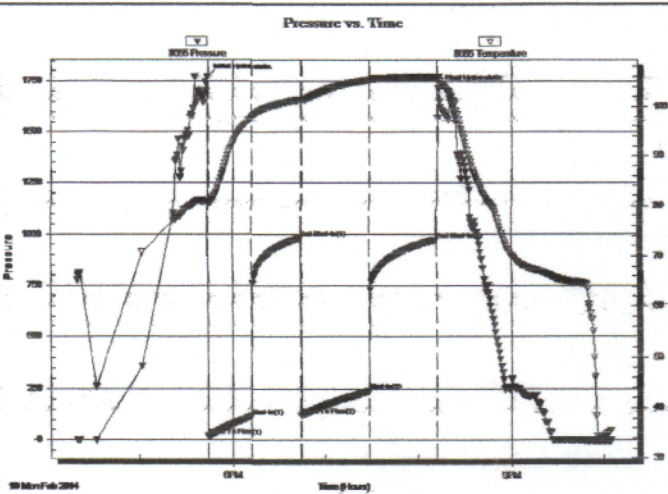
14-15s-14w Ruseell KS
Kramer "A" #8
 Job Ticket: 56070 **DST#: 5**
 Test Start: 2014.02.10 @ 16:20:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:44:30
 Time Test Ended: 22:04:15
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Cooy Bloedorn
 Unit No: 73
 Interval: **3337.00 ft (KB) To 3342.00 ft (KB) (TVD)**
 Total Depth: 3342.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Reference Elevations: 1885.00 ft (KB)
 1878.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8655 Outside
 Press@RunDepth: 240.74 psig @ 3338.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.02.10 End Date: 2014.02.10 Last Calib.: 2014.02.10
 Start Time: 16:20:05 End Time: 22:04:14 Time On Btm: 2014.02.10 @ 17:44:00
 Time Off Btm: 2014.02.10 @ 20:13:15

TEST COMMENT: 30 - IF- B.O.B. in 6 minutes
 30 - ISL- Surface return
 45 - FF- B.O.B. in 10 minutes
 45 - FSI- Surface return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1770.62	80.89	Initial Hydro-static
1	20.54	80.48	Open To Flow (1)
29	117.33	97.81	Shut-In(1)
61	980.88	101.38	End Shut-In(1)
61	120.89	101.07	Open To Flow (2)
105	240.74	105.31	Shut-In(2)
148	972.22	105.72	End Shut-In(2)
150	1714.75	105.83	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
310.00	MW, 10%M, 90%W	4.35
186.00	MW, 40%M, 60%W	2.61
30.00	Oil, 100%O	0.42

* Recovery from multiple tests

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston Rd, STE 800
 Dallas TX 75225
 ATTN: Clint Musgrove

14-15s-14w Ruseell KS
Kramer "A" #8
 Job Ticket: 56071 **DST#: 6**
 Test Start: 2014.02.11 @ 05:46:00

GENERAL INFORMATION:

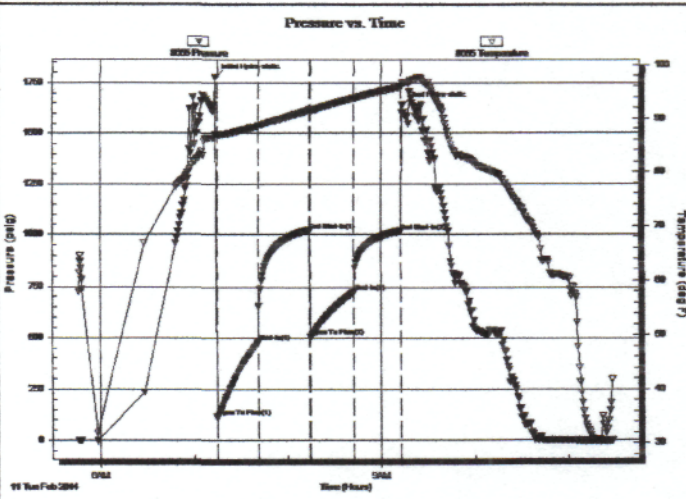
Formation: **Arbuckle**
 Deviated: **No Whipstock:** ft (KB)
 Time Tool Opened: 07:14:30
 Time Test Ended: 11:28:00
 Interval: **3346.00 ft (KB) To 3355.00 ft (KB) (TVD)**
 Total Depth: **3355.00 ft (KB) (TVD)**
 Hole Diameter: **7.88 inches** Hole Condition: **Fair**
 Test Type: **Conventional Bottom Hole (Reset)**
 Tester: **Cody Bloedorn**
 Unit No: **73**
 Reference Elevations: **1885.00 ft (KB)**
1878.00 ft (CF)
 KB to GR/CF: **7.00 ft**

Serial #: 8655

Outside

Press@RunDepth: **723.14 psig @ 3347.00 ft (KB)** Capacity: **8000.00 psig**
 Start Date: **2014.02.11** End Date: **2014.02.11** Last Calib.: **2014.02.11**
 Start Time: **05:46:05** End Time: **11:27:59** Time On Btm: **2014.02.11 @ 07:13:45**
 Time Off Btm: **2014.02.11 @ 09:13:30**

TEST COMMENT: 30 - IF- B.O.B. in 30 seconds
 30 - IS- No return
 30 - FF- B.O.B. in 30 seconds
 30 - FS- Surface return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1777.24	86.99	Initial Hydro-static
1	113.67	86.80	Open To Flow (1)
28	478.15	88.56	Shut-In(1)
61	1022.40	91.61	End Shut-In(1)
61	506.54	91.42	Open To Flow (2)
89	723.14	93.79	Shut-In(2)
119	1017.74	95.89	End Shut-In(2)
120	1639.99	96.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	WM, 40%W, 60%M	1.68
1240.00	MW, 5%M, 95%W	17.39
186.00	MW, 40%M, 60%W	2.61

* Recovery from multiple tests

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 7064

Date	2-3-14	Sec.	14	Twp.	15	Range	14	County	Russell	State	KS	On Location	Finish	11:00 PM
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Location Russell 75 E into

Lease <u>Kramer</u>	Well No. <u>#8</u>	Owner
Contractor <u>Southwind #3</u>		To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.
Type Job <u>Surface</u>		
Hole Size <u>12 1/4</u>	T.D. <u>534</u>	Charge To <u>Ma. Oil</u>
Csg. <u>8 5/8</u>	Depth <u>534</u>	Street
Tbg. Size	Depth	City State
Tool	Depth	The above was done to satisfaction and supervision of owner agent or contractor.
Cement Left in Csg. <u>25'</u>	Shoe Joint	Cement Amount Ordered <u>250 6% 40 3% cc 2% 6d</u>
Meas Line	Displace <u>32 1/4 451</u>	

EQUIPMENT

Pumptrk <u>5</u>	No.	Cementer	Common
		Helper <u>Lonnie W</u>	Poz. Mix
Bulktrk <u>3</u>	No.	Driver <u>David</u>	Gel.
Bulktrk <u>PU</u>	No.	Driver <u>Bratt</u>	Calcium

JOB SERVICES & REMARKS

Remarks:	Salt
Rat Hole	Flowseal
Mouse Hole	Kol-Seal
Centralizers	Mud CLR 48
Baskets	CFL-117 or CD110 CAF 38
D/V or Port Collar	Sand
	Handling
	Mileage

FLOAT EQUIPMENT

<u>Cement</u>	Guide Shoe
	Centralizer
	Baskets
	AFU Inserts
	Float Shoe
	Latch Down

Pumptrk Charge

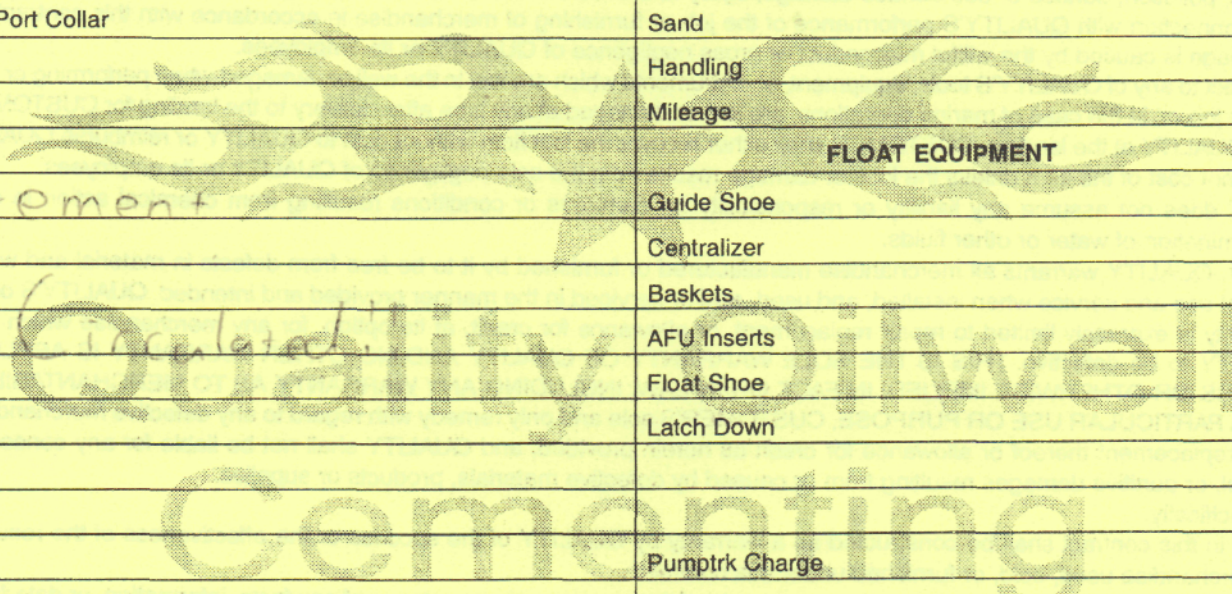
Mileage

Tax

Discount

Total Charge

X Signature [Signature]



QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 455

Date	2-12-14	Sec.	14	Twp.	15	Range	14	County	Russell	State	KS	On Location	6:00 AM	Finish	10:45 PM
Lease								Location							
Kramer A								Russell & D's E into							
Contractor								Well No.		Owner					
Southwind								B		To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.					
Type Job								T.D.		Charge To					
pipe 56								3395		M					
Hole Size								Depth		Street					
7 7/8								3397		Main artery					
Csg.								Depth		City					
5 1/2										State					
Tbg. Size								Depth		The above was done to satisfaction and supervision of owner agent or contractor.					
Tool								Depth		Cement Amount Ordered					
Cement Left in Csg.								Shoe Joint		100 60/40 15 8 1/4					
19.25								19.90		2% gel 1/4 flow					
Meas Line								Displace		Common					
								80 1/4 BM		125 60/40 10% 5 1/4					
EQUIPMENT															
Pumptrk		No.	Cementer		Helper		Poz. Mix								
5			Mutt				2% gel 1/4 flow								
Bulktrk		No.	Driver		Driver		Gel.								
1-3			Lorraine		Doug										
Bulktrk		No.	Driver		Driver		Calcium								
pu			Clayton				Hulls								
JOB SERVICES & REMARKS															
Remarks:								Salt							
Rat Hole								Flowseal							
Mouse Hole								Kol-Seal							
Centralizers								Mud CLR 48							
1-7 10 21 23								1000 9							
Baskets								CFL-117 or CD110 CAF 38							
2-11								Sand							
D/V or Port Collar								Handling							
Up and Bull								Mileage							
Circulated 45 min plug								5 1/2							
Rat hole mixed down								FLOAT EQUIPMENT							
Rat Displace with water								Guide Shoe							
								Centralizer tubos: 10							
								Baskets Bead 2							
								AFU Inserts							
								Float Shoe							
								Latch Down 1							
								Rubber Plug							
								Pumptrk Charge							
								Mileage							
								Tax							
								Discount							
								Total Charge							
Signature															

